

**TURBOMACHINE COMPRESSOR SCROLL WITH LOAD-CARRYING INLET
VANES**

ABSTRACT OF THE DISCLOSURE

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A compressor scroll housing for use in conjunction with turbo-machinery, particularly applicable in aircraft. The scroll housing can include a plurality of scroll vanes arrayed around the scroll housing. Scroll vanes, integrally formed with the scroll housing, carry stress load on the scroll housing, including the load from fluid pressure within the scroll and carcass loading from the engine. The plurality of scroll vanes adapted for guiding flow of fluid from an inlet to an outlet while supporting the scroll housing. Chord length and cross sectional area of each scroll vane can be sized to maintain an equal stress in all scroll vanes. A method of making the scroll housing for use with an impeller connected to an engine is disclosed, as well as a method of operating turbo-machinery including supporting a load on the scroll housing with scroll vanes while maintaining an equal stress on each scroll vane.

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